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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 15782-3PCT PTN/df		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/CA2004/000970		International filing date (day/month/year) 30.06.2004	Priority date (day/month/year) 04.07.2003	
International Patent Classification (IPC) or national classification and IPC G09F11/12				
Applicant SIRONA INC. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 4 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 04.05.2005		Date of completion of this report 10.10.2005		
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**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/CA2004/000970

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-14 as originally filed

Claims, Numbers

1-18 filed with telefax on 10.08.2005

Drawings, Sheets

1/5-5/5 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing *(specify)*:
 - ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/CA2004/000970

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
- ☐ the entire international application,
 - ☒ claims Nos. 16-18
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 16-18 are so unclear that no meaningful opinion could be formed (*specify*):
see separate sheet
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☐ no international search report has been established for the said claims Nos.
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
 - ☐ See separate sheet for further details

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/CA2004/000970

Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has:
- ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
- ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
- ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-6,16-18 .

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	1-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Re Item III

1. The device claim 16 relates to a connector for connecting a sheet to a drive of a display apparatus. Actually the claim repeats some of the features of claim 1. In principle undue repetition of wording between one claim and another should be avoided by the use of the dependent form. Moreover, in order to meet the requirements of Article 6 PCT taken in combination with Rule 13.1 PCT claim 16 should refer to the display apparatus according to claim 1.

2. Claim 17 relates to the connector of claim 16 further comprising a resilient spacer between the abutment portion and the longitudinal member and merely repeats the subject-matter of claim 3. The claim seems to be superfluous.

3. Claim 18 also repeats some of the features of claim 1. The claim, therefore, also seems to be superfluous.

Re Item IV

1. Reference is made to the following documents:

D1: US-A-5 678 333 (AIKEN, SR. ET AL) 21 October 1997 (1997-10-21)

D2: DE 44 34 310 A1 (SMA STAHL-, MASCHINEN- UND ANLAGENBAU GMBH BORKEN, 39576 STENDAL, DE) 28 March 1996 (1996-03-28)

D3: US-A-5 953 840 (SIMSON ET AL) 21 September 1999 (1999-09-21)

2. This Authority considers that there are two inventions covered by the claims indicated as follows:

I: Claims 1-6, 16-18 directed to a display apparatus comprising at least one connector for connecting a sheet to a drive, the connector having a longitudinal member connected to the drive and an abutment portion securable against the longitudinal member wherein the edge portion of the sheet has a pleat received against an edge of the longitudinal member such that the sheet lies on opposed surfaces of the longitudinal member, with the abutment portion abutting both the opposed surfaces.

II: Claims 7-15 directed to a display apparatus comprising a drive for displacing sheets in a circuit to a display position; an actuator for actuating the drive and at least one connector device for connecting opposed ends of a sheet along the drive, the connector device having a first connector securing a first edge portion of a sheet to the drive, and a second connector device having a longitudinal member secured to a second edge portion of the sheet and connected to the drive, an abutment portion securable against the longitudinal member for retaining the edge portion of the sheet therebetween, and a tensioner connecting the longitudinal member to the drive to maintain the sheet in a taut condition with a predetermined tension.

The reasons for which the inventions are not so linked as to form a single general inventive concept, as required by Rule 13.1 PCT, are as follows:

2.1 The prior art has been identified as document D1 (see fig. 2, 10-23 and corresponding description) and discloses a display apparatus (10) for sequentially displacing sheets (58) to a display position, comprising: a drive (52) for displacing sheets to a display position; an actuator (42) for actuating the drive; and at least one connector for connecting a sheet (58) to the drive (52) such that the sheet is displaceable to the display position, the connector having a longitudinal member (180) connected to the drive for supporting an edge portion of the sheet (58) (see col. 10, lines 59-62) and an abutment portion (150) securable against the longitudinal member (180) for retaining the edge portion of the sheet (58) therebetween.

It follows that the following technical features of claim 1 makes a contribution over the prior art and can be considered as special technical features within the meaning of Rule 13.2 PCT: the edge portion of the sheet has a **pleat** received against an edge of the longitudinal member such that **the sheet lies on opposed surfaces of the longitudinal member**, with the **abutment portion abutting both the opposed surfaces**.

2.2 The problem solved by these special technical features can therefore be construed as to provide a display apparatus in which the display sheets can be easily changeable on site for immediate use.

2.3 Also, examining the possible correspondence by technical effect, one finds that the technical effect of the first invention is that a better clamping is provided by the abutment

portion due to the effect of a hook for the advertisement sheet on the longitudinal support member;

and that the technical effect of the second invention is that the ripping of the advertisement sheet in cold weather is prevented by using a tensioner.

This appears to show lack of corresponding technical effect as well. Consequently, neither the objective problem underlying the subjects of the claimed inventions, nor their solutions defined by the special technical features allow for a relationship to be established between the said inventions, which involves a single general inventive concept.

3. In conclusion, the groups of claims are not linked by common or corresponding special technical features and define two different inventions not linked by a single general inventive concept.

The application, hence does not meet the requirements of unity of invention as defined in Rules 13.1 and 13.2 PCT.

Re Item V

1. **Claim 1:** None of the documents cited in the International Search Report discloses a display apparatus for sequentially displacing sheets to a display position with features as recited in Claim 1.

Document D1 discloses a display apparatus for sequentially displacing sheets to a display position, comprising: a drive for displacing sheets to a display position, an connector for connecting a sheet to the drive, the connector having a longitudinal member connected to the drive for supporting an edge portion of the sheet and an abutment portion securable against the longitudinal member for retaining the edge portion of the sheet therebetween.

Document D2 discloses a fastener for posters for use in advertising display cases which has shaped strip with one or more troughs and clamp to hold poster in trough by shape mating or friction. **Document D3** discloses a banner flattening mechanism wherein attachment points of the banner are formed along a web at regular interval and a hook and loop fastener are arranged corresponding to each attachment point.

The problem to be solved by the present invention may be regarded as to provide a display apparatus in which the display sheets can be easily changeable on site for immediate use.

The **solution** to this problem consist in that the edge portion of the sheet has a pleat received against an edge of the longitudinal member such that the sheet lies on opposed surfaces of the longitudinal member, with the abutment portion abutting both the opposed surfaces.

The **advantage** is in that a better clamping is provided by the abutment portion due to the effect of a hook for the advertisement sheet on the longitudinal support member.

The claimed device **involves an inventive step** since none of the cited prior art documents, either alone or in combination, disclose or fairly suggest to provide a pleat at the edge portion of a sheet wherein the pleat is received against an edge of a longitudinal member such that the sheet lies on opposed surfaces of the longitudinal member, with an abutment portion abutting both the opposed surfaces.

Claim 1 meets therefore the requirements of Article 33(2), 33(3) PCT.

2. **Claims 2-6** are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VII

1. Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

2. The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

3. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these documents identified therein.

4. The description is not in conformity with the claims as required by Rule 5.1(a)(iii) PCT.

5. The units of measure employed on page 13, line 18 is not additionally expressed in terms of the units stipulated by Rule 10.1(a) PCT.

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/CA2004/000970

* * *

CLAIMS

1. A display apparatus for sequentially displacing sheets to a display position, comprising:
at least one sheet having a pleat at an edge
5 portion thereof;
a drive for displacing sheets to a display position;
an actuator for actuating the drive; and
at least one connector for connecting one of
10 the sheets to the drive such that the sheet is displaceable to the display position, the connector having a longitudinal member connected to the drive such that the pleat is received against an edge of the longitudinal member with the sheet lying on opposed
15 surfaces of the longitudinal member, and an abutment portion securable against the longitudinal member for abutting both the opposed surfaces.
2. The display apparatus according to claim 1, further comprising one other connector at an opposite
20 edge portion of the sheet for connecting the opposite edge portion of the sheet to the drive.
3. The display apparatus according to claim 1, further comprising a resilient spacer between the abutment portion and the longitudinal member for
25 retaining the edge portion of the sheet between the abutment portion and the resilient spacer.
4. The display apparatus according to claim 1, wherein the drive displaces the sheets in a continuous sequence.
- 30 5. The display apparatus according to claim 1, wherein the actuator has a sensor/controller for

detecting the sheets reaching the display position and for maintaining the sheets in the display position for predetermined amounts of time.

6. The display apparatus according to claim 1, wherein the sheet is a support sheet adapted to support an advertisement sheet.

7. A display apparatus for sequentially displacing sheets to a display position, comprising:
a drive for displacing sheets in a circuit to
10 a display position;
an actuator for actuating the drive; and
at least one connector device for connecting opposed ends of a sheet along the drive, the connector device having:
15 (i) a first connector securing a first edge portion of a sheet to the drive; and
(ii) a second connector device having a longitudinal member secured to a second edge portion of the sheet and connected to the drive so as to be
20 restrictively displaceable along the drive;
an abutment portion securable against the longitudinal member for retaining the edge portion of the sheet therebetween;
and a tensioner connecting the longitudinal
25 member to the drive to maintain the sheet in a taut condition with a predetermined tension.

8. The display apparatus according to claim 7, wherein the first connector has a respective longitudinal member connected to the drive for
30 supporting the first edge portion of the sheet, and a respective abutment portion securable against the respective longitudinal member for retaining the edge portion of the sheet therebetween.

9. The display apparatus according to claim 7, further comprising a resilient spacer between the abutment portion and the longitudinal member for retaining the second edge portion of the sheet between
5 the abutment portion and the resilient spacer.

10. The display apparatus according to claim 7, wherein the edge portion of the sheet has a pleat received against an edge of the longitudinal member such that the sheet lies on opposed surfaces of the
10 longitudinal member, with the abutment portion abutting both the opposed surfaces.

11. The display apparatus according to claim 7, wherein the drive displaces the sheets in a continuous sequence.

15 12. The display apparatus according to claim 7, wherein the actuator has a sensor/controller for detecting the sheets sequentially reaching the display position and for maintaining the sheets in the display position for predetermined amounts of time.

20 13. The display apparatus according to claim 7, wherein the sheet is a support sheet adapted to support an advertisement sheet.

14. The display apparatus according to claim 7, wherein the second connector is pivotally mounted to the
25 drive.

15. The display apparatus according to claim 7, wherein the drive has a pair of belts spaced parallel from one another and each supported by a pair of pulleys.

16. A connector for connecting a sheet to a drive of a display apparatus for sequentially displacing sheets to a display position, comprising:

5 a longitudinal member for supporting an edge portion of the sheet;

connector ends at opposed longitudinal ends of the longitudinal member for connecting the longitudinal member to the drive; and

10 an abutment portion securable against the longitudinal member for retaining the edge portion of the sheet therebetween.

17. The connector according to claim 16, further comprising a resilient spacer between the abutment portion and the longitudinal member for retaining the 15 edge portion of the sheet between the abutment portion and the resilient spacer.

18. The connector according to claim 16, wherein the edge portion of the sheet has a pleat received against an edge of the longitudinal member such that the 20 sheet lies on opposed surfaces of the longitudinal member, with the abutment portion abutting both the opposed surfaces.

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